

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claim 1 (Currently Amended): A semiconductor device comprising:
a semiconductor element having an electrode;
a metal block having a first surface and a second surface opposite to said first surface;
an electrode terminal joined to said first surface of said metal block; and
a ceramic substrate having metal layers formed on both surfaces, one of said metal layers joined directly by a first jointing material to said second surface of said metal block, said first jointing material being a metallic material,

wherein said semiconductor element and said electrode are joined to said first surface of said metal block through a second jointing material.

Claim 2 (Original): The semiconductor device according to claim 1, wherein said metal layers formed on said both surfaces of said ceramic substrate are the same with each other in thickness.

Claim 3 (Previously Presented): The semiconductor device according to claim 1, wherein

said semiconductor element includes a plurality of semiconductor elements;

said metal block and said ceramic substrate are separated per insulation unit of at least one of said plurality of semiconductor elements;

said metal block is provided to be in correspondence with at least one of said plurality of semiconductor elements; and

said ceramic substrate extends over all of said plurality of semiconductor elements for forming said insulation unit.

Claim 4 (Previously Presented): The semiconductor device according to claim 1, wherein said metal block includes a surface having a region larger than a surface of said second jointing material on a side opposite to said second jointing material, said surface of said second jointing material lying on a side opposite to said semiconductor element.

Claim 5 (Previously Presented): The semiconductor device according to claim 1, wherein

a gap between said metal block and said semiconductor element becomes wider as a distance from a center of said semiconductor element becomes longer; and

said gap is filled with said second jointing material.

Claim 6 (Original): A semiconductor device comprising:

a metal block having a first surface and a second surface opposite to said first surface;

a semiconductor element joined to said first surface of said metal block through a jointing material;

a resin insulating layer having a third surface and a fourth surface opposite to said third surface, said third surface being joined to said second surface of said metal block; and

a resin package for sealing said metal block and said semiconductor element, wherein said fourth surface of said resin insulating layer is exposed, and said resin insulating layer has an elasticity higher than that of said resin package.

Claim 7 (Original): The semiconductor device according to claim 6, wherein said resin insulating layer is made of a silicon resin including a ceramic material for filling said silicon resin.

Claim 8 (Original): The semiconductor device according to claim 6, wherein said metal block is provided per insulation unit of said semiconductor element.

Claim 9 (Previously Presented): The semiconductor device according to claim 6, wherein said metal block includes a surface having a region larger than a surface of said jointing material on a side opposite to said jointing material, said surface of said jointing material lying on a side opposite to said semiconductor element.

Claim 10 (Original): The semiconductor device according to claim 6, wherein a gap between said metal block and said semiconductor element becomes wider as a distance from a center of said semiconductor element becomes longer; and said gap is filled with said jointing material.

Application No.: 09/895,025
Reply to Office Action of July 8, 2004

Claim 11 (Previously Presented): The semiconductor device according to claim 1,
wherein

said semiconductor element includes a plurality of semiconductor elements;

said metal block and said ceramic substrate are separated per insulation unit of at least
one of said plurality of semiconductor elements;

said ceramic substrate is provided to be in correspondence with at least one of said
plurality of semiconductor elements; and

said metal block extends over all of said plurality of semiconductor elements for
forming said insulation unit.